

PLASMA ARC TORCH ELECTRODE

ABSTRACT OF THE DISCLOSURE

A variety of electrodes for use in a plasma arc torch are provided that improve cooling between the electrode and an adjacent cathodic element such as a cathode. At least one passageway is formed between the electrode and the cathode for the flow of a fluid, e.g. cooling fluid, wherein the flow of the fluid is proximate, or through an adjacent vicinity of, electrical contact between the cathode and the electrode. The passageway is formed through the electrode, through the cathode, between the electrode and the cathode, and through a third element in the various forms of the present invention. Further, methods of operating a plasma arc torch using the electrodes according to the various forms of the invention are also provided.